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a crystalline film containing tungsten, carbon, and nitrogen for preventing copper diffusion from the wiring layer to the insulator film, the crystalline film arranged between the insulator film and the wiring layer.

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5. (Twice Amended) A semiconductor device comprising:
- an insulator film formed on a substrate;
 - a crystalline film formed on the insulator film;
 - a wiring layer of copper formed on the crystalline film; and
 - the crystalline film for preventing copper diffusion from the wiring layer to the insulator film, the crystalline film formed of a material comprising tungsten, carbon, and nitrogen, the crystalline film arranged between the insulator film and the wiring layer.

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15. (Amended) The semiconductor device comprising:
- an insulator film formed on a substrate;
 - a WC_xN_y crystalline film formed on the insulator film; and
 - a wiring layer of copper formed on the crystalline film,
- wherein the crystalline film prevents copper diffusion from the wiring layer to the insulator film.
16. (Amended) The semiconductor device according to claim 15, wherein the crystalline film, when subjected to X-ray diffraction, has a spectrum having a first peak between 36 degrees and 38 degrees and a second peak between 42 degrees and 44 degrees.

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